



DIOTEC ELECTRONICS CORP.
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T-03-09

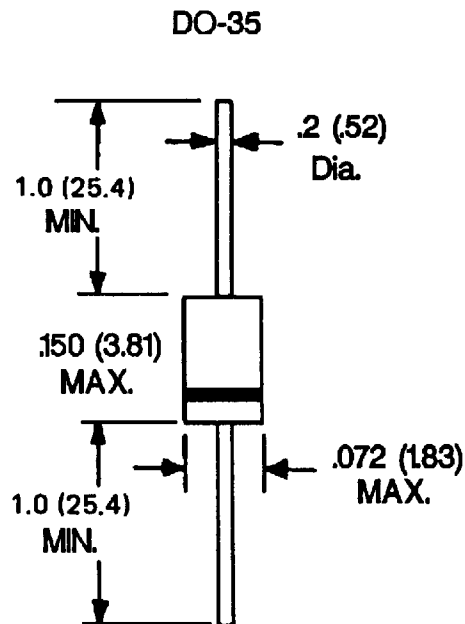
1N4148 MINIATURE ULTRA-FAST SWITCHING DIODE

FEATURES:

- Hermetically sealed glass package
- Low cost
- Superfast recovery time
- Low leakage
- Low forward voltage drop
- High current capability

MECHANICAL DATA

- Case: JEDEC DO-35, glass body
- Terminals: Axial leads, solderable per MIL-STD-202, method 208
- Polarity: Color band denotes cathode end
- Mounting Position: Any
- Weight: 0.14 grams



Dimensions in inches & (millimeters)

MAXIMUM RATINGS & ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
 Single phase, half wave, 60Hz, resistive or inductive load.
 For capacitive load, derate current by 20%.

MAXIMUM RATING @ T _a =25°C (unless otherwise specified)	SYMBOL		UNITS
Series Number		1N4148	
Maximum Recurrent Reverse Peak Voltage	V _{RRM}	75	Volts
Breakdown Voltage at I _R = 5μA	V _B	75	
Breakdown Voltage at I _R = 100μA	V _B	100	
Maximum Average Forward Rectified Current @ T _a = 50°C	I _o	150	mA
Peak Forward Surge Current	I _{FSM}	1	Amps
Pulse Width = 1 sec. Pulse Width = 1μs		4	
Maximum Forward Voltage at I _o = 10mA	V _F	1	Volts
Maximum DC Reverse Current	I _R	25	nA
@: V _r = 20V, T _a = 25°C V _r = 75V, T _a = 150°C		5	μA
Maximum Reverse Recovery Time (Note 1)	T _{RR}	4	nS
Typical Junction Capacitance (Note 2)		4	pF
Power Dissipation		500	mW
Junction Operating Temperature Range	T _j	-65 to +175	°C
Storage Temperature Range	T _{STG}	-65 to +175	°C

NOTES: (1) Measured at: I_f = 10mA, V_r = 6V, R_L = 100Ω, recover to 1mA
 (2) Measured at 1MHz & applied reverse voltage of 0 volts DC.



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RATING & CHARACTERISTIC CURVES (1N4148)

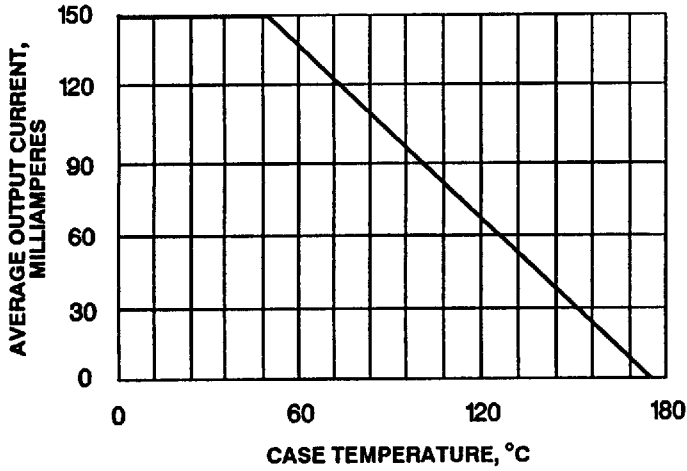


Fig. 1: Typical forward current derating curve.

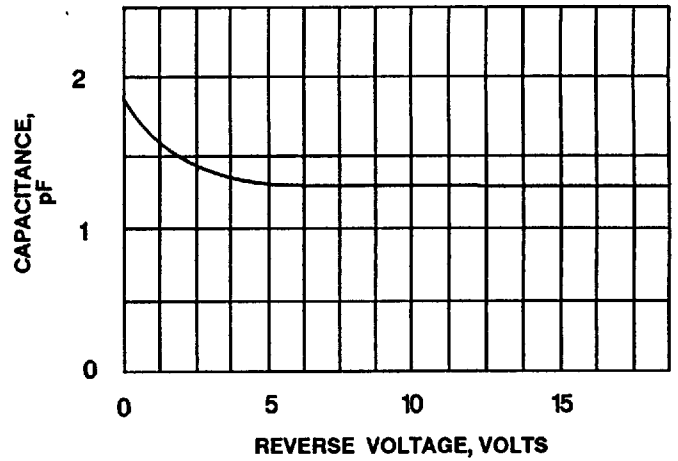


Fig. 2: Typical forward capacitance.

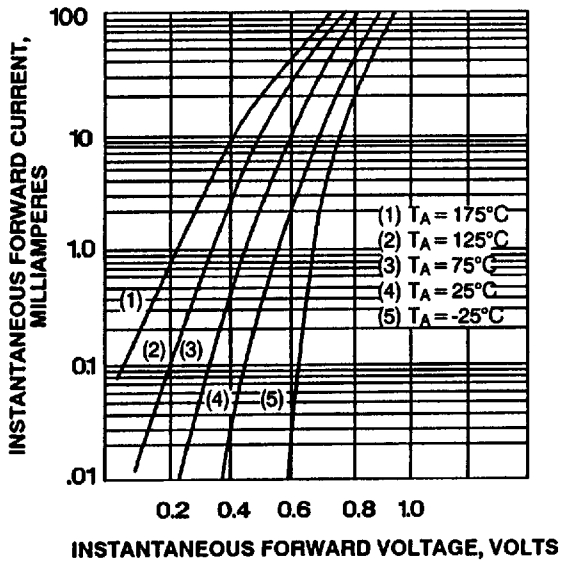


Fig. 3: Typical forward characteristics.

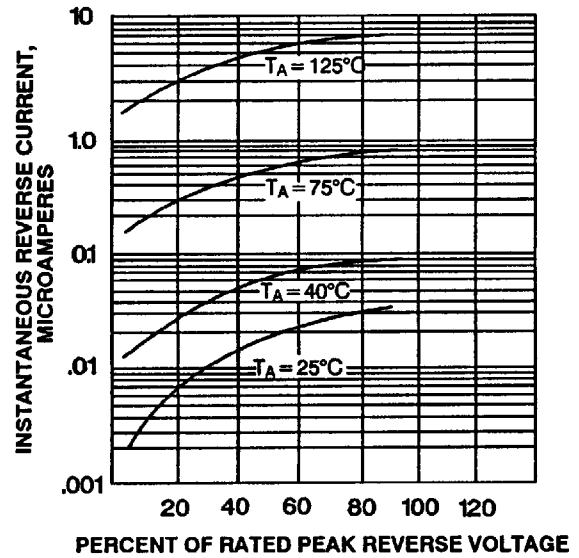
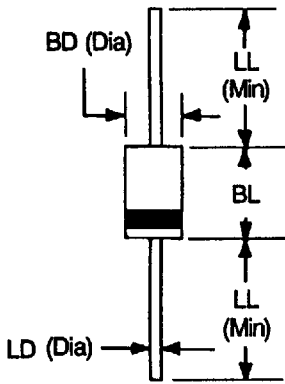


Fig. 4: Typical reverse characteristics.

Appendix I: Package & Pin Orientation

T.91.20

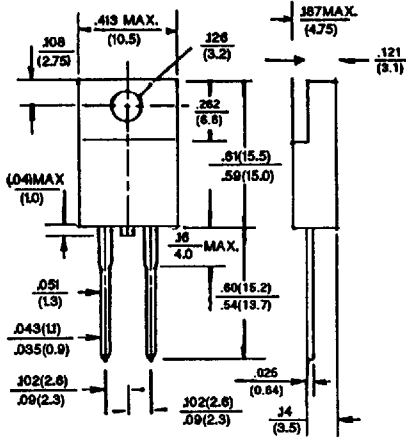
AXIAL LEAD DIODES



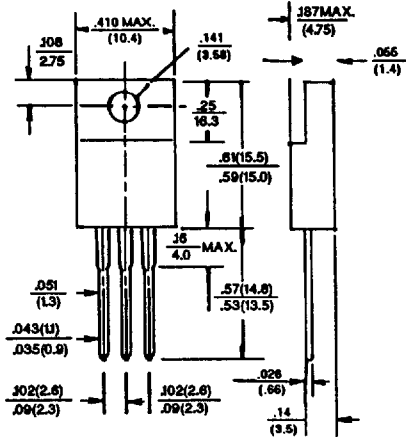
SYMBOL	DEVICE PACKAGES			
	DO-15	DT-15	DO-27	DT-27
BL	0.25 (6.35)	0.265 (6.7)	0.36 (9.15)	0.395 (10)
BD	0.132 (3.35)	0.14 (3.5)	0.205 (5.2)	0.225 (5.8)
LL	1 (25.4)	1 (25.4)	1 (25.4)	0.825 (21)
LD	0.03 (0.8)	0.03 (0.8)	0.05 (1.25)	0.056 (1.4)

SYMBOL	DO-35	DO-41	DT-41	G-6A
	BL	0.142 (3.6)	0.195 (4.95)	0.2 (5.2)
BD	0.07 (1.78)	0.105 (2.67)	0.1 (2.5)	0.275 (7)
LL	1 (25.4)	1 (25.4)	1 (25.4)	1 (25.4)
LD	0.03 (0.8)	0.03 (0.8)	0.03 (0.8)	0.05 (1.25)

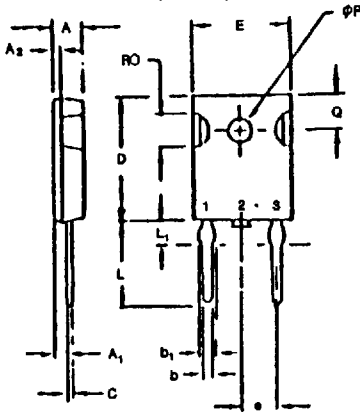
TO220AC



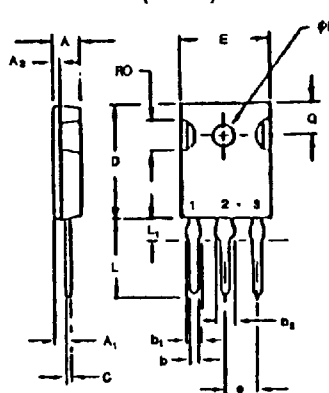
TO220AB



TO247(TO-3P)AC



TO247(TO-3P)AB

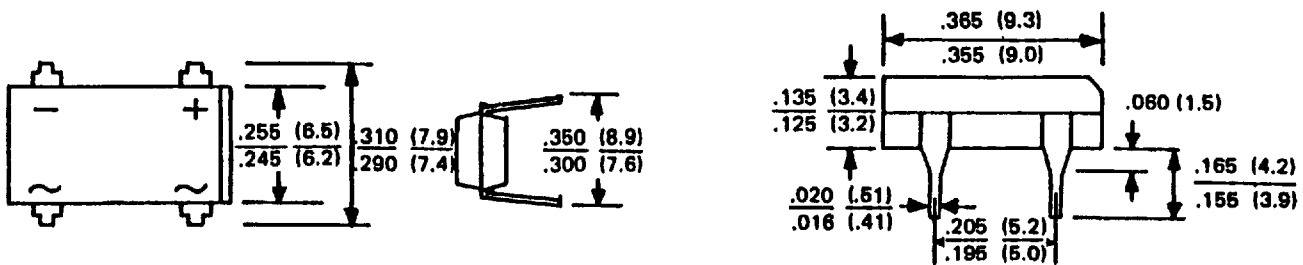


SYMBOL	DEVICE PACKAGES
	TO247AB & TO247AC
A	0.2 (5.1)
A ₁	0.095 (2.4)
A ₂	0.08 (2.03)
b	0.05 (1.27)
b ₁	0.09 (2.29)
b ₂	0.125 (3.18)
c	0.025 (0.62)
D	0.79 (20)
E	0.615 (15.62)
e	0.215 (5.46)
L	0.57 (14.48)
L ₁	0.16 (4.06)
∅P	0.125 (3.18)
Q	0.215 (5.46)
RO	0.2 (5.1)

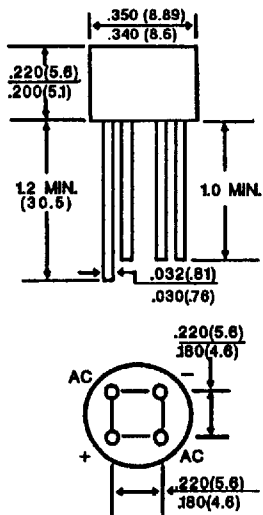
Dimensions in inches & (millimeters)

Appendix I: Package & Pin Orientation

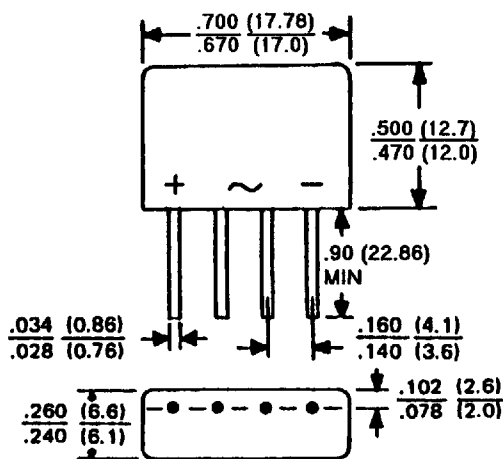
DI



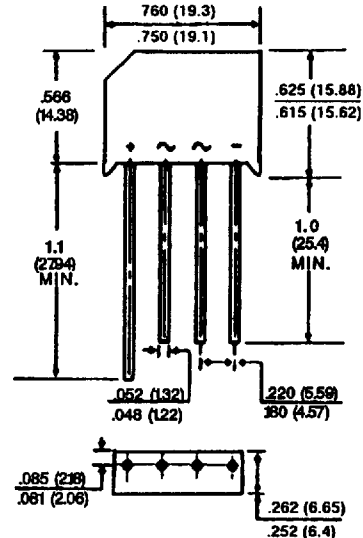
WB



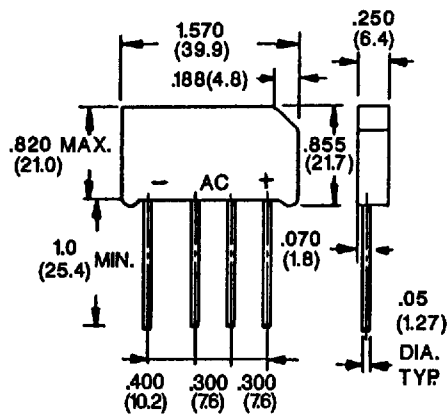
SB2



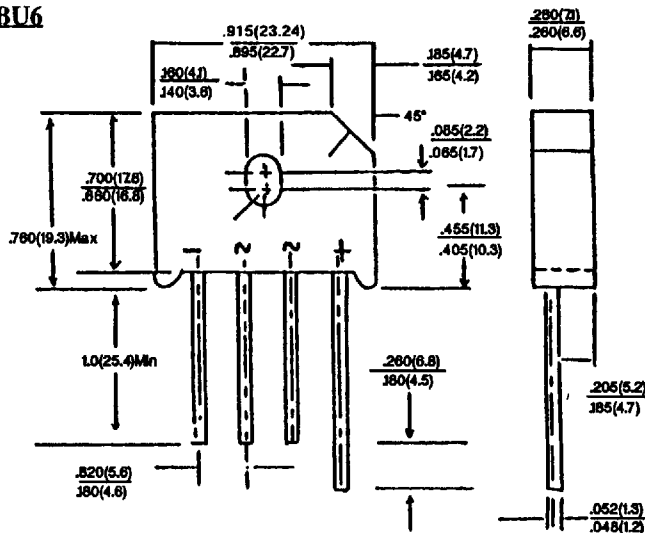
SB4



SB5



SBU6



Appendix I: Package & Pin Orientation

SYMBOL	DEVICE PACKAGES			
	DB3		DB6	
	MAX.	MIN.	MAX.	MIN.
BL	0.62 (15.7)	0.58 (14.7)	0.62 (15.7)	0.58 (14.7)
BH	0.21 (5.4)	0.19 (4.9)	0.27 (6.9)	0.23 (5.8)
D1	0.445 (11.3)	0.405 (10.3)	0.445 (11.3)	0.405 (10.3)
LD	0.035 (0.9)	0.028 (0.7)	0.042 (1.1)	0.039 (1)
LL	NA	0.75 (19)	NA	0.75 (19)

SYMBOL	DB8		MB10	
	MAX.	MIN.	MAX.	MIN.
	BL	0.77 (19.6)	0.73 (18.5)	0.61 (15.5)
BH	0.3 (7.6)	0.25 (6.4)	0.21 (5.3)	0.23 (5.8)
D1	0.52 (13.2)	0.48 (12.2)	0.445 (11.3)	0.405 (10.3)
LD	0.052 (1.3)	0.048 (1.2)	0.042 (1.1)	0.039 (1)
LL	NA	0.875 (22.2)	NA	0.75 (19)

SYMBOL	DEVICE PACKAGES			
	DB25P		DB25P(W)	
	MAX.	MIN.	MAX.	MIN.
BL	1.13 (28.17)	1.12 (28.4)	1.13 (28.7)	1.12 (28.4)
BH	0.4 (10.1)	0.39 (9.9)	0.4 (10.1)	0.39 (9.9)
D1	0.66 (16.7)	0.62 (15.7)	NA	NA
D2	0.73 (18.5)	0.69 (17.5)	0.73 (18.5)	0.69 (17.5)
D3	0.57 (14.5)	0.53 (13.5)	NA	NA
D4	NA	NA	0.47 (11.9)	0.43 (10.9)
HT	1 (25.4)	NA	NA	NA
HW	NA	NA	NA	1.2 (30.5)
LD	NA	NA	0.042 (1.1)	0.039 (1)

SYMBOL	DEVICE PACKAGES			
	DB25		DB25(W)	
	MAX.	MIN.	MAX.	MIN.
BL	1.13 (28.7)	1.12 (28.4)	1.13 (28.7)	1.12 (28.4)
BH	0.44 (11.2)	0.43 (11)	0.44 (11.2)	0.43 (11)

(All other dimensions identical to those of DB35P package.)

(All other dimensions identical to those of DB35P(W) package.)

Dimensions in inches & (millimeters)

Appendix II: Packaging Information

1) Tape & Reel Packaging (Axial-lead Devices)

DEVICE TYPE	COMPONENT SPACE "A" Inches (mm)	TAPE SPACE "B" Inches (mm)	REEL DIAMETER "C" Inches (mm)	QUANTITY		CARTON DIMENSIONS Inches (mm)	CARTON GROSS WEIGHT Lbs (Kgs)
				PER REEL	PER CARTON		
DO-41/DT-41	0.2 (5)	2.06 (52.4)	12.82 (326)	5,000	20,000	14 x 14 x 14 (355 x 355 x 355)	22 (10.5)
DO-15/DT-15	0.2 (5)	2.06 (52.4)	12.82 (326)	3,500	14,000		19 (8.5)
DO-27/DT-27	0.395 (10)	2.06 (52.4)	12.82 (326)	1,250	5,000		21 (9.4)
G-6A	0.395 (10)	2.06 (52.4)	12.82 (326)	600	2,400		16.5 (7.5)

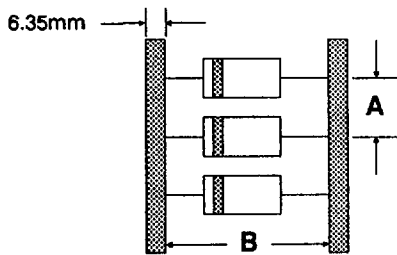


Fig. 1

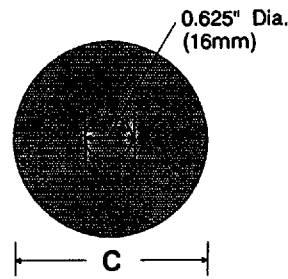


Fig. 2

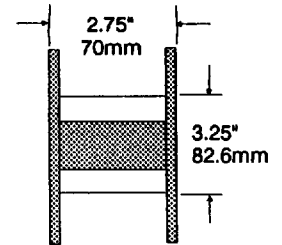


Fig. 3

2) Bulk Packaging

DEVICE TYPE	BOX SIZE Inches	CARTON SIZE Inches	QUANTITY		GROSS WEIGHT, Lbs (Kgs)	
			PER BOX	PER CARTON	PER BOX	PER CARTON

AXIAL-LEAD DIODES

DO-41 / DT-41	7.88 x 3.31 x 0.94	17.25 x 8.75 x 10	1,000	50,000	0.825 (0.37)	43 (19.5)
DO-15 / DT-15	7.88 x 3.31 x 1.25	17.25 x 8.75 x 10	1,000	40,000	1.03 (0.46)	43 (19.5)
DO-27 / DT-27	12 x 3 x 1.56	15.5 x 12.25 x 11.25	500	15,000	1.438 (0.65)	44 (20)
G-6 A	12 x 3 x 1.56	15.5 x 12.25 x 11.25	400	12,000	1.5 (0.68)	50.6 (23)

BRIDGE RECTIFIERS

WB	12 x 4.25 x 3.75	22.5 x 13 x 12.5	1,000	15,000	2.87 (1.3)	46.6 (21.2)
SB2	8.38 x 6.44 x 2.06	17.5 x 9 x 9.5	400	4,000	3.12 (1.4)	33 (15)
DB3	7.62 x 7.62 x 1.56	17.5 x 8.5 x 9	200	2,000	1.37 (0.6)	15.5 (7)
SB4	8.75 x 8.75 x 2	17.5 x 9 x 10.5	400	4,000	5.12 (2.35)	53 (24)
SB5	13.5 x 6.69 x 1.5		400		22.7 (10.32)	
SBU6	11.12 x 7.75 x 1.75		400		7.48 (3.4)	
DB6	7.62 x 7.62 x 1.56	17.5 x 8.5 x 9	200	2,000	1.9 (0.87)	20.7 (9.4)
DB8	8.75 x 8.75 x 1.56	17.5 x 9 x 9.5	200	2,000	2.37 (1.08)	25.5 (11.6)
DB25/T	7.62 x 7.62 x 1.56	17.5 x 8.5 x 9.75	50	500	3.75 (1.7)	39 (17.8)
DB25/W	7.62 x 7.62 x 1.56	17.5 x 8.5 x 9.75	50	500	3.5 (1.59)	36.5 (16.6)
DB25P/T	7.62 x 7.62 x 1.56	17.5 x 8.5 x 9.75	50	500	2.46 (1.12)	26.1 (11.9)
DB25P/W	7.62 x 7.62 x 1.56	17.5 x 8.5 x 9.75	50	500	2.2 (1.01)	23.5 (10.6)

3) Anti-static Plastic Tube Packaging

			PER TUBE	PER CARTON	PER TUBE	PER CARTON
DI	19.2 LONG	22.5 x 13 x 12.5	50	20,000	0.1 (0.045)	46.2 (21)
TO-220 AB/AC	20.5 LONG		50		0.2 (0.09)	
TO-3P (TO-247)	16 LONG		25		0.375 (0.17)	